

REMARKS

Claims 45-64, 66-73, 76-79, 82-84, and 86 are pending in the present application. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

35 U.S.C. § 112, Second Paragraph

Claim 46 was rejected under 35 U.S.C. § 112, second paragraph. The claim has been amended to eliminate the use of the word current. For the record, Applicant believes that the claims as originally presented, considered in light of Applicant's specification (fully consistent with the law), would not have been confusing to those skilled in the art, and therefore the claims in their previous form are fully in accordance with §112. At **worst**, the claims including claim 46 in their previous form might be considered objectionable, but **only** as to form.

Nevertheless, in deference to the Examiner's views and to avoid or minimize needless argument, and as indicated above, a number of cosmetic amendments have been made in the claims. Such amendments are of a formal nature only, *i.e.*, made to place the claims in better form consistent with U.S. practice. These amendments are not "narrowing" amendments because the scope of the claims has not been reduced in these regards. No limitations have been added in these regards and none are intended.

35 U.S.C. § 102

Claim 45 was rejected under 35 U.S.C. § 102(b) as being anticipated by Barnsley (U.S. Patent No. 5,488,501). This rejection is respectfully traversed.

Claim 45 recites in a telecommunication system, a method for routing optical data signals using a first communication path extending between at least two network elements of the telecommunication system and comprising at least one optical link for carrying optical data signals, and a second communication path extending between the at least two network elements of the telecommunication system and comprising one or more optical links for carrying optical addressing signals, the method comprising the steps of providing a combination of said optical addressing signals to provide addressing information required for establishing an address for routing the optical data signals, and providing said second communication path as one or more optical links which is physically different from any of the optical links comprised in said first communication path. This is not taught, disclosed or made obvious by the prior art of record.

The Examiner is thanked for his time during the telephone interview on March 28, 2007. During that interview, the Examiner clarified his interpretation of the claims, wherein he has interpreted the word "node" as referring to any two points in the network. Applicant respectfully disagrees with that interpretation. However, in an attempt to further prosecution, claims 45, 55, 82, and 86, have been amended to refer to network elements, rather than nodes. The other independent claims refer to routers. The claims must be interpreted in view of Applicant's disclosure, as it would be understood by one of ordinary skill in the relevant art. In particular,

During examination, "claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990); accord [*In re Bass*, 314 F.3d [576,] 577 [(Fed. Cir. 2002)] ("The PTO must apply the broadest reasonable meaning to the claim language, taking into account any

definitions presented in the specification."); *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999) ("Although the PTO must give claims their broadest reasonable interpretation, this interpretation must be consistent with the one that those skilled in the art would reach."); [In re] Hyatt, 211 F.3d [1367,] 1372 [(Fed. Cir. 2000)].

In re Am. Acad. of Sci. Tech Ctr., 367 F.3d 1359, 1364, 70 U.S.P.Q.2d 1827 (Fed. Cir. 2004).

Applicant's specification, at page 3, lines 20-25, states:

The network element in accordance with the present invention is a device provided with routing capabilities, e.g. a router, and the like. For the sake of convenience such a network element will be referred to hereinafter as a "router", but this term should be understood to encompass also any other device having switching and forwarding capabilities.

According to this portion of the application, a network element is a device with routing capabilities. The Examiner's interpretation is thus not supported by Applicant's disclosure as it would be understood by one of ordinary skill in the art.

In accordance with the discussion with the Examiner, claim 45 has been amended to clarify that the first and second communication paths are between the same two network elements ("a first communication path extending between at least two network elements of the telecommunication system . . . a second communication path extending between the at least two network elements of the telecommunication system"). Thus, as admitted by the Examiner during the telephone interview, the Examiner's interpretation of the points 6 and 7 of Barnsley as the first communication path and the points 7 and 15 as the second communication path, must fail.

Barnsley discloses a splitter 7 within the node 1, which splits the signals to two different paths. However, these paths are within the node, and do not extend

between two nodes. Barnsley does not disclose two communication paths between two network elements, which communication paths are optical links and the optical links of the second communication path is physically different from any of the optical links comprised in the first communication path, as recited in claim 1.

Further, the points 6, 7 and 15 of Barnsley are not network elements as they would be understood by one of ordinary skill based on Applicant's disclosure. In particular, points 6, 7 and 15 do not have routing capability. Only the nodes described in Barnsley have such capabilities, and as described above, Barnsley does not disclose two different communication paths between those nodes.

For at least these reasons, Applicant respectfully submits that claim 45 is patentable over Barnsley.

35 U.S.C. § 103

Claims 46-47, 53, 55-56, 61, 63-64, 66, 72-73, 76-79, 82-84, and 86 were rejected under 35 U.S.C. § 103 as being unpatentable over Fatehi (U.S. Patent Number 6,600,583) in view of Barnsley. Claims 48-52, 54, 57-60, 62, and 67-71 were rejected under 35 U.S.C. § 103 as being unpatentable over Fatehi in view of Barnsley and Nir (U.S. Patent No. 6,160,653). These rejections are respectfully traversed.

Claim 46 recites in a telecommunication system, a method for routing optical data signals between at least two routers in the system. The method includes generating first optical addressing signals by converting signals identifying a destination address into corresponding optical addressing signals, transmitting the optical addressing signals over one or more optical addressing links from one of the at least two routers to another router of the at least two routers, and concurrently or

subsequently transmitting the optical data signals to the other router via an optical data link. The optical data link extends from the one router of the at least two routers to the other router on at least one partially physically different path from the one or more optical addressing links extending from the one router of one of the at least two routers to the next router of the at least two routers. This is not taught, disclosed or made obvious by the prior art of record.

According to the teachings of Fatehi, the addressing and data signals are always conveyed along the same physical path. For example, column 4, lines 1-15, states that

we utilize an "optical message tag" on the carrier wavelength which includes packet destination information associated with a group of packets which are carried on a wavelength. Optical tagging is described in U.S. Pat. No. 5,745,274,..., which describes the use of a frequency tone as a sub-carrier for carrying message tags, [and] under certain conditions, one could modulate the message tags directly on the envelopes of the data carrying wavelengths without using sub-carrier tone frequencies.

The Office Action acknowledges that Fatehi does not teach or suggest that the addressing links are at least partially different from the optical data links. The Office Action cites Barnsley as allegedly teaching this concept, and alleges that it would have been obvious to one of ordinary skill in the art to "allow the optical data link and the optical addressing link to be on at least partially physically different paths," and that one of ordinary skill would have been motivated to do so "to allow the addressing data to be used to route the optical data signals through a switch (abstract of Barnsley)." Applicant respectfully disagrees.

First, Fatehi describes that "optical tags are formed by modulating individual optical carriers (e.g. lasers) with a unique identifier signal (i.e. frequency tone) that can be readily read, modified or written. While this patent describes the use of a frequency tone as a subcarrier for carrying message tags, under certain conditions, one could modulate the message tags directly on the envelopes of the data carrying wavelengths without using subcarrier tone frequencies." (Col. 4 lines 7-15). Since Fatehi states very clearly that optical tags are formed by modulating optical carriers with a unique identifier signal, there is no reason for a person ordinarily skilled in the art to envision the opposite, *i.e.*, that the data signals and addressing signals, the tags, should not be modulated in order to allow conveying them along different routes. Thus, if at all, a combination of Fatehi with a reference that teaches the use of a subcarrier for carrying the control data such as Barnsley, can only be construed as teaching away from the present invention.

Moreover, Fatehi states the following:

In accordance with the present invention, optical tagging is associated with a group of packets and used for signaling between routers for controlling the routing of that group of packets over an optical network of Fig. 1. The superimposed "tag" can be removed in the optical domain. . . . More importantly, a new tag can be generated in the optical domain and applied in the intermediate router/cross-connects." (Col. 4, lines 18-27.)

Thus, the person ordinarily skilled in the art would have undoubtedly realized that the optical tags (the addressing signals) must be conveyed along the very same physical path as the data signals. As there is no *a priori* knowledge at which intermediate routers/cross connects along the path for conveying the addressing signals will the newly generated tag be applied, there is no way to determine *a priori*

the two paths (each comprising a plurality of links) that could be used for conveying the data signals and the addressing signals, while complying with the two constraints: a) that at least one or more of the links in the two paths are different, and b) that both the old tag and the data reach the same intermediate router/cross-connect in a synchronized way to allow applying the newly generated tags.

Furthermore, Applicant respectfully submits that the combination which the Examiner proposed of Fatehi and Barnsley cannot be considered as one that teaches the claimed features that is missing from Fatehi alone, *i.e.*, that the optical data link and the optical addressing link are at least partially physically different paths between two nodes or routers in the system. Barnsley teaches conveying of optical data signals at a first wavelength and control signals at a second wavelength, while multiplexing the data and control signals onto the transmission line through which the signals then pass between the two nodes. Only once the signals reach the destination node 1 is a small portion of the control signals diverted to a band pass filter 14 via a splitter 7. (Col. 4, lines 18-21; Fig. 1). The Examiner's contention that points 6 and 7 of Barnsley are "nodes", or in the case of claim 46, "routers", must fail in light of Applicant's specification as it would be understood by one of ordinary skill in the art. In particular, as described fully above, those points do not have routing capabilities, and are thus not routers as used in Applicant's claims. Accordingly, Barnsley does not teach the concept of having two different communication paths between at least two routers in the network.

Thus, there is no indication, nor any implicit motivation provided by Barnsley, to transmit the data and control signals along different paths between two nodes or routers in the system.

For at least these reasons, Applicant respectfully submits that the independent claims 45, 46, 55, 66, 76, 82, and 86 are patentable over the prior art of record

Further, Applicant respectfully submits that the dependent claims, depending from each of the independent claims respectfully, are patentable in and of themselves and as they depend from and include the recitations of the independent claims from which they depend for the reasons discussed above.

In view of the above amendments and remarks, Applicant respectfully requests entry of the proposed amendment and submits that upon such entry, the application will be in condition for allowance. Early notice to this effect is most earnestly solicited.

If the Examiner has any questions, or is inclined not to withdraw the outstanding rejections, he is invited to contact the undersigned at 202-628-5197, to advance prosecution.

Respectfully submitted,

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